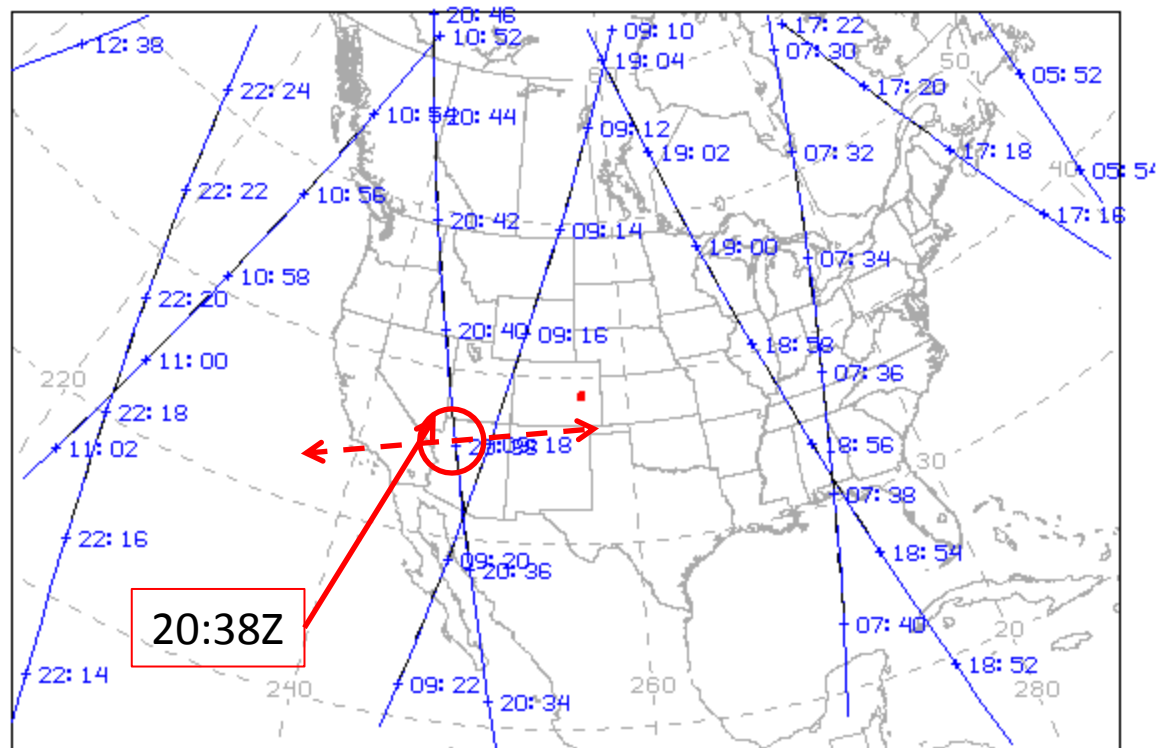


RAQMS 20150322 SONGNEX 78hr Forecast  
for 18Z March 24, 2015  
Science Flight

S-NPP (CrIS) overpass on 2015/03/24  
NUCAPS CO<sub>2</sub>, O<sub>3</sub>, CO, CH<sub>4</sub> Validation Opportunity – **eastern edge of swath**

S-NPP overpass is west of Denver (red dot) at 20:38Z (2:38pm Mountain)



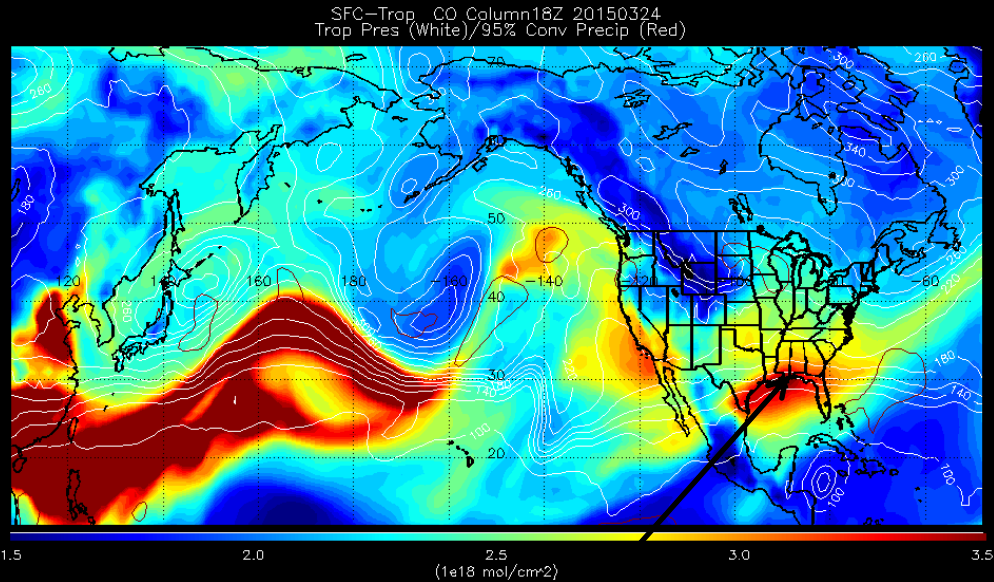
NPP 2015/03/24 UTC

NPP ORBITAL PREDICT PLOT

EPOCH DATE: Mar-20-2015

lat: 39.749 lon: 255.011 res: 24 km

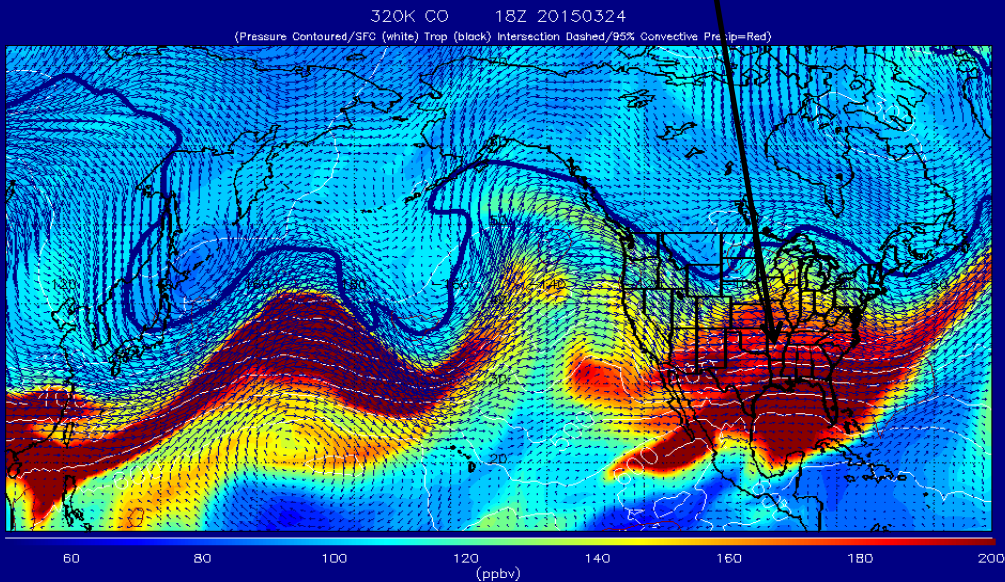
**Approximate swath width**



Elevated CO from  
Intercontinental Transport  
aloft over southern US at 320K

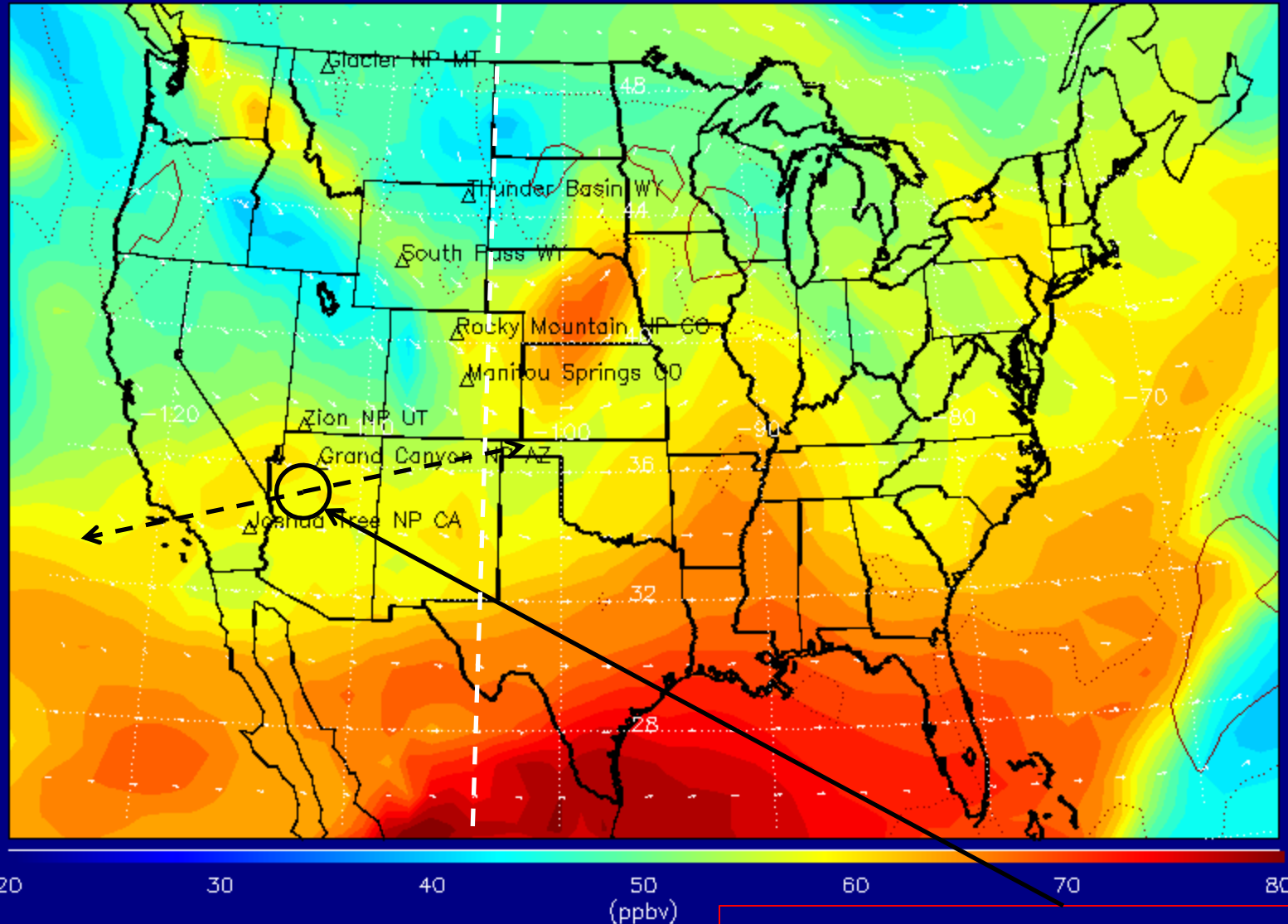
Largest column  
amounts are forecasted  
to be over Gulf Coast

RAQMS 78hr 320K FX valid 18Z March 24, 2015



05km O<sub>3</sub> 18Z 20150324

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPDP=0.148722 mm/hr



20

30

40

50  
(ppbv)

60

70

80

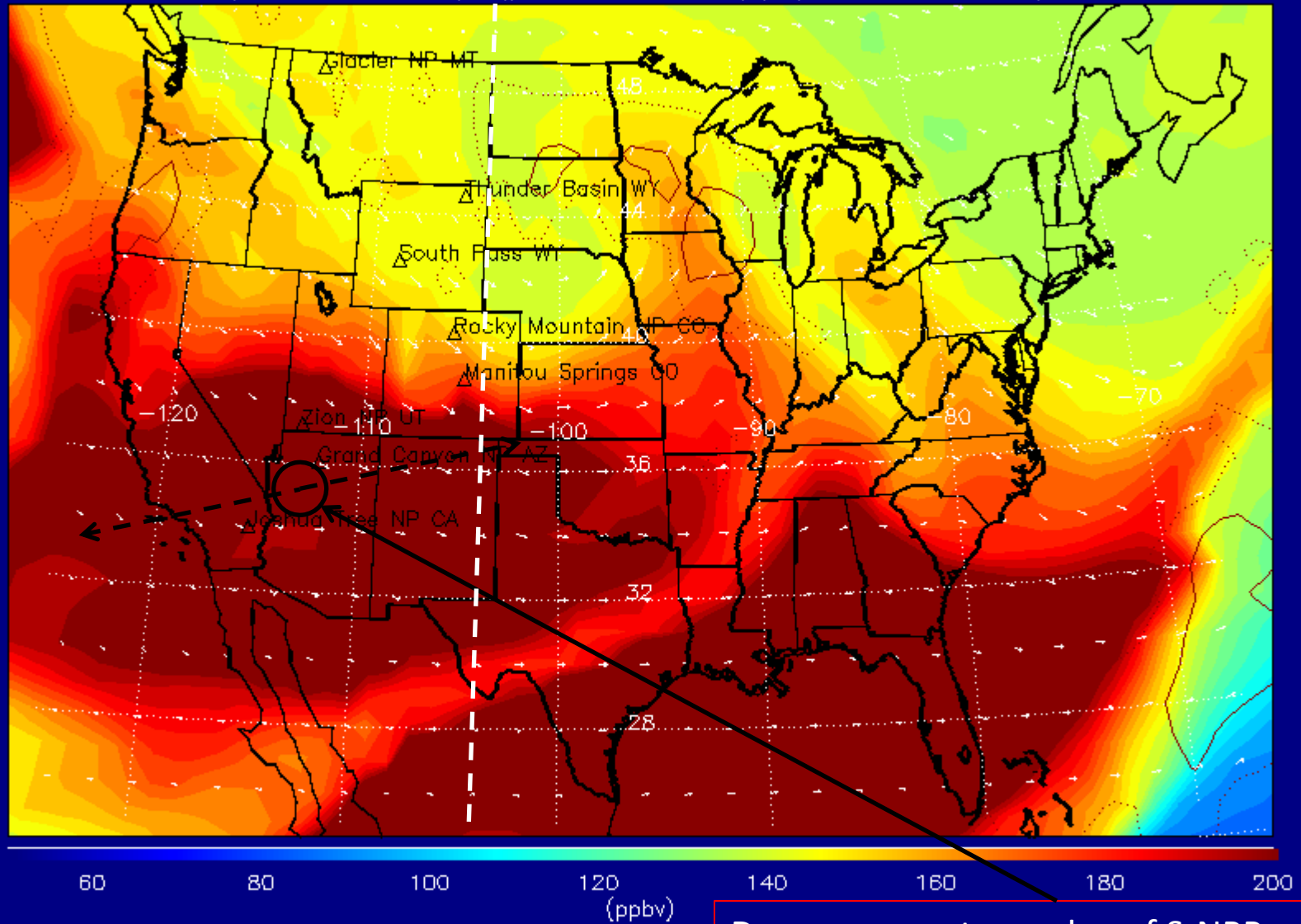
RAQMS<sub>6</sub> 78hr Fx Initialized 12Z 20150321

Denver on eastern edge of S-NPP swath

Approximate swath width

05km CO 18Z 20150324

(MSL Pressure Contoured (white))/95-75% Convective Precip (Red) 95% CPCP=0.148722 mm/hr



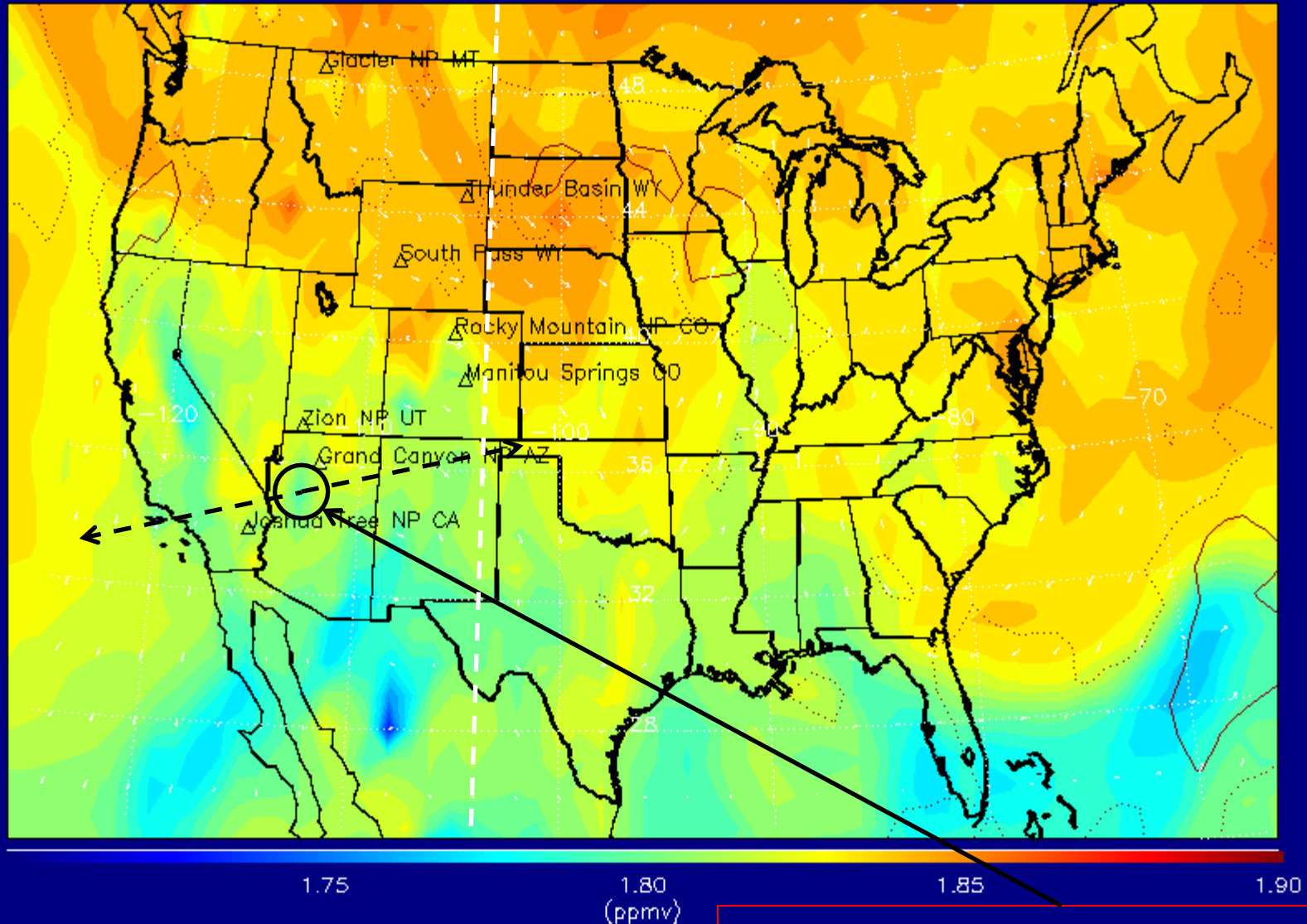
RAQMS<sub>6</sub> 78hr Fx Initialized 12Z 20150321

Denver on eastern edge of S-NPP swath

**Approximate swath width**

01km AGL CH4 18Z 20150324

(MSL Pressure Contoured (white)/95-75% Convective Precip (Red) 95% CPCP=0.148722 mm/hr

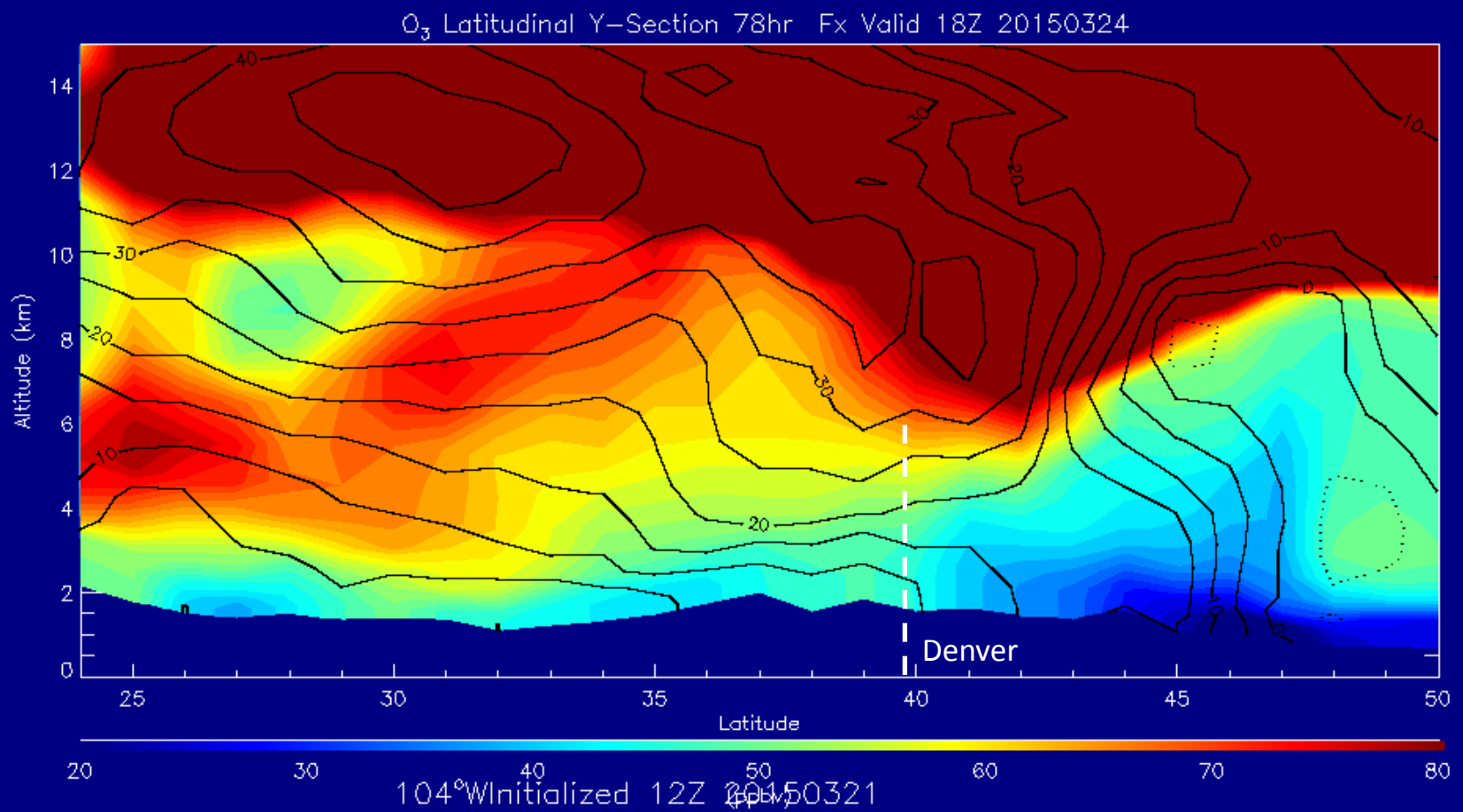


RAQMS<sub>6</sub> 78hr Fx Initialized 12Z 20150321

Denver on eastern edge of S-NPP swath

RAQMS surface CH4 constrained with 1990 mixing ratio – introduces ~0.1ppmv low bias

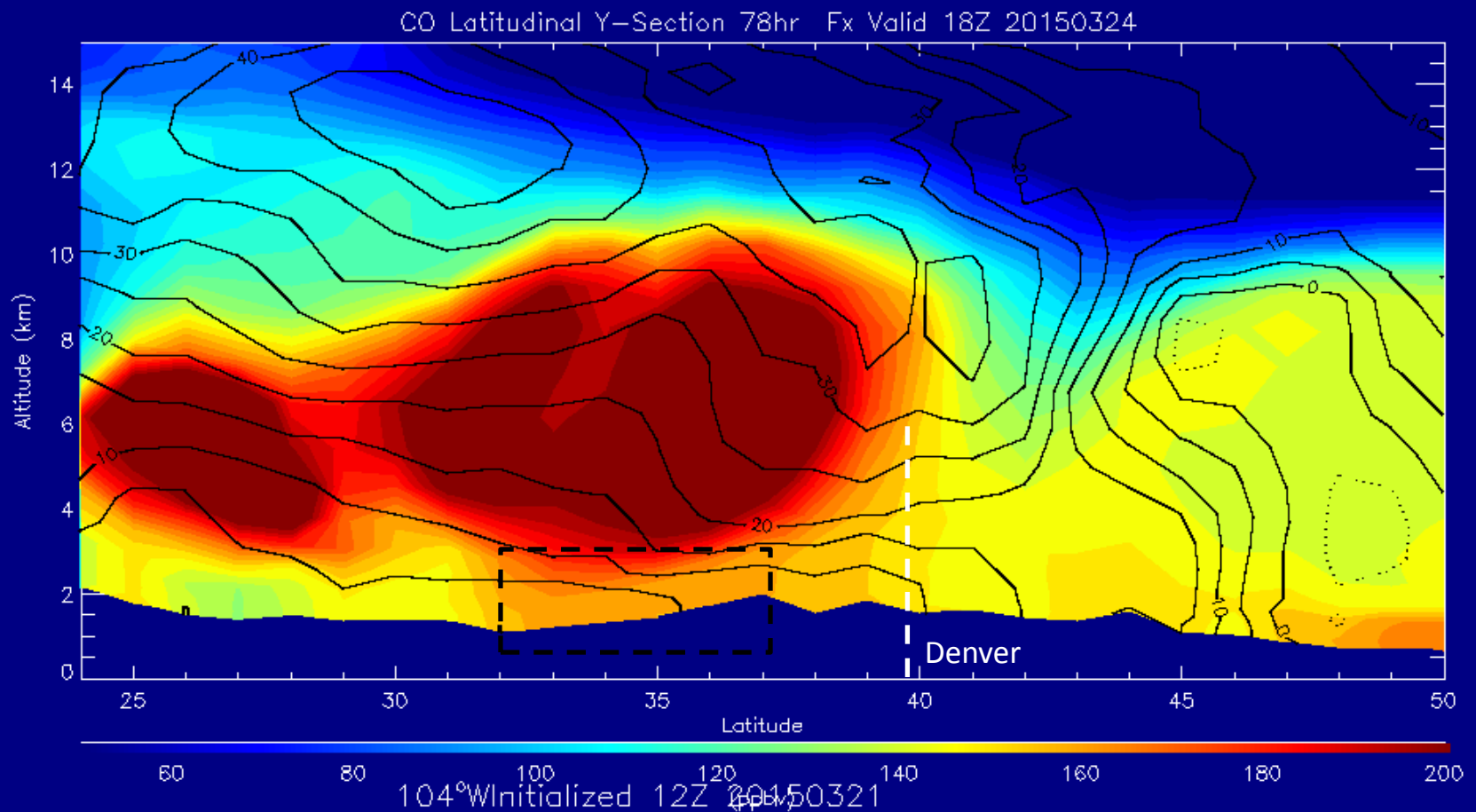
## RAQMS O<sub>3</sub> Cross-section at 104W





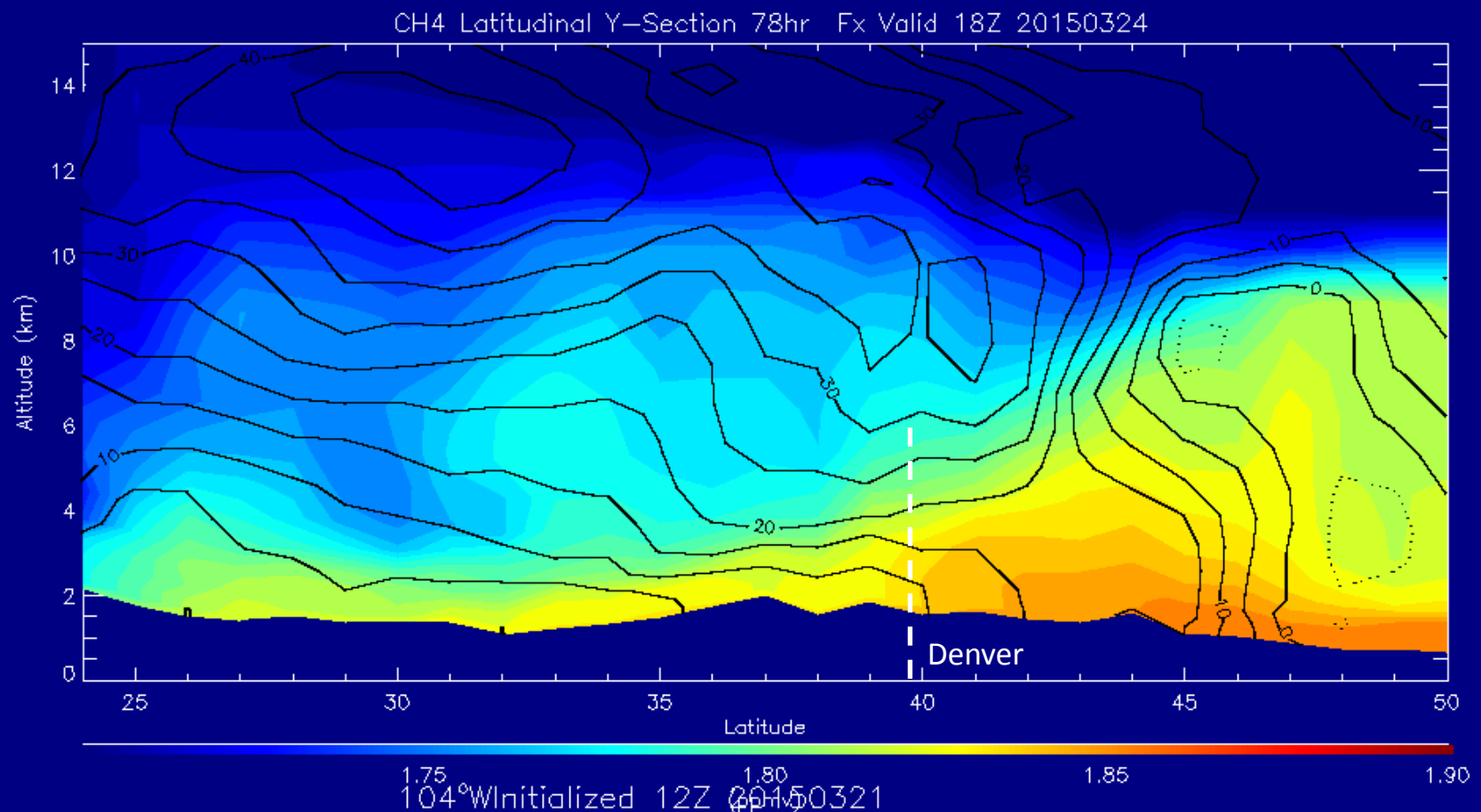
## RAQMS CO Cross-section at 104W

78hr FX has high CO plume above 3km with mixing down into PBL south of Denver





## RAQMS CH<sub>4</sub> Cross-section at 104W



RAQMS surface CH<sub>4</sub> constrained with 1990 mixing ratio – introduces ~0.1ppmv low bias